Cambridge Assessment International Education

Cambridge IGCSE™

BIOLOGY **0610/11**

Paper 1 Multiple Choice (Core) **October/November 2021**

45 minutes

You must answer on the multiple choice answer sheet.

You will need: Multiple choice answer sheet
Soft clean eraser
Soft pencil (type B or HB is recommended)

INSTRUCTIONS

- There are **forty** questions on this paper. Answer **all** questions.
- For each question there are four possible answers **A**, **B**, **C** and **D**. Choose the **one** you consider correct and record your choice in soft pencil on the multiple choice answer sheet.
- Follow the instructions on the multiple choice answer sheet.
- Write in soft pencil.
- Write your name, centre number and candidate number on the multiple choice answer sheet in the spaces provided unless this has been done for you.
- Do **not** use correction fluid.
- Do **not** write on any bar codes.
- You may use a calculator.

INFORMATION

- The total mark for this paper is 40.
- Each correct answer will score one mark.
- Any rough working should be done on this question paper.

This document has **16** pages.

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1 Which characteristics of all living organisms are needed to release energy for growth?

A breathing and respiration

B excretion and nutrition

C excretion and respiration

D nutrition and respiration

2 Which pair of organisms belong to the same genus?

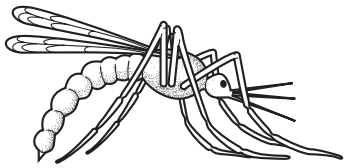
A *Alderia modesta* and *Austrominius modestus*

B *Arenicola cristata* and *Arenicola marina*

C *Bittium reticulatum* and *Clypeostoma reticulatum*

D *Botryllus schlosseri* and *Botrylloides leachii*

3 The diagram shows an animal.



What is the animal?

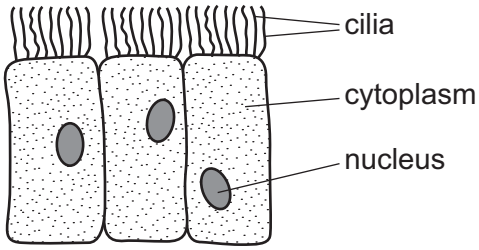
1	animal with a vertebral column	vertebrate
	animal with an exoskeleton	go to 2
2	no distinct head, thorax and abdomen	**A**
	distinct head, thorax and abdomen	go to 3
3	eye occupies less than one third of the head	**B**
	eye occupies more than one third of the head	go to 4
4	wings are wider than they are long	**C**
	wings are longer than they are wide	**D**

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4 Which row shows the structure on the outside of a plant cell and the location of the chloroplasts in the cell?

	structure on the outside of a plant cell	location of chloroplasts
A	cell membrane	in the cytoplasm
B	cell membrane	in the vacuole
C	cell wall	in the cytoplasm
D	cell wall	in the vacuole

5 The diagram shows some cells.



Where are these cells found?

A alimentary canal

B blood

C bronchus

D plant roots

6 What is the equation for calculating the magnification of a biological drawing?

A magnification = actual size × image size × 100

B magnification = actual size ÷ image size

C magnification = image size ÷ actual size

D magnification = actual size × 100 ÷ image size

7 Which words complete the definition of diffusion?

'Diffusion is the net movement of particles from a region of their ……1…... concentration to a region of their ……2…... concentration, ……3…... a concentration gradient.'

	1	2	3
A	higher	lower	up
B	higher	lower	down
C	lower	higher	up
D	lower	higher	down

8 Cyanide is a poison that stops respiration. A paramecium is a single-celled freshwater organism.

What is the most likely effect of cyanide in a paramecium?

A increased active transport

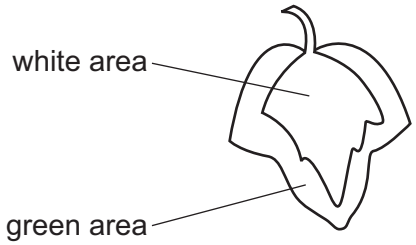
B decreased osmosis

C decreased active transport

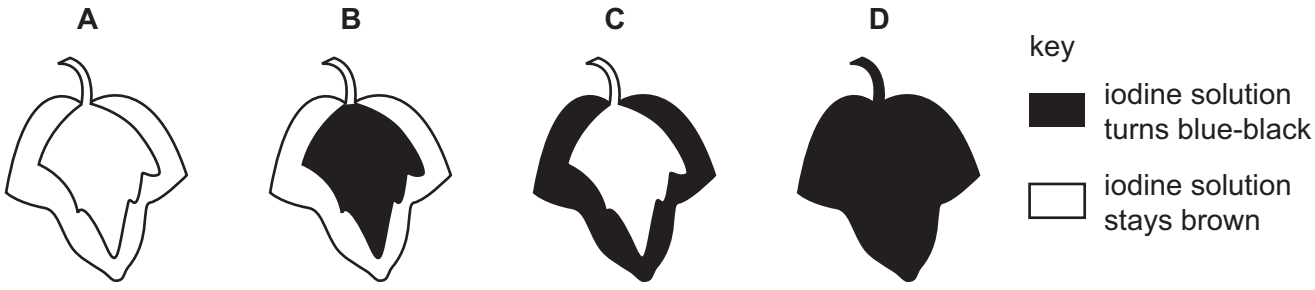
D increased osmosis

9 In a photosynthesis experiment, a plant is left in bright sunlight for several hours. A leaf is then removed from the plant and tested for starch, using iodine solution.

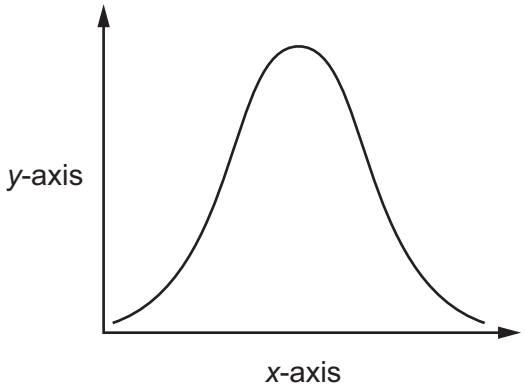
The diagram shows the leaf from the plant that was used in the experiment.



Which diagram shows the result of the experiment?



10 An experiment was carried out to investigate the effect of pH on enzyme action. The graph shows the results.

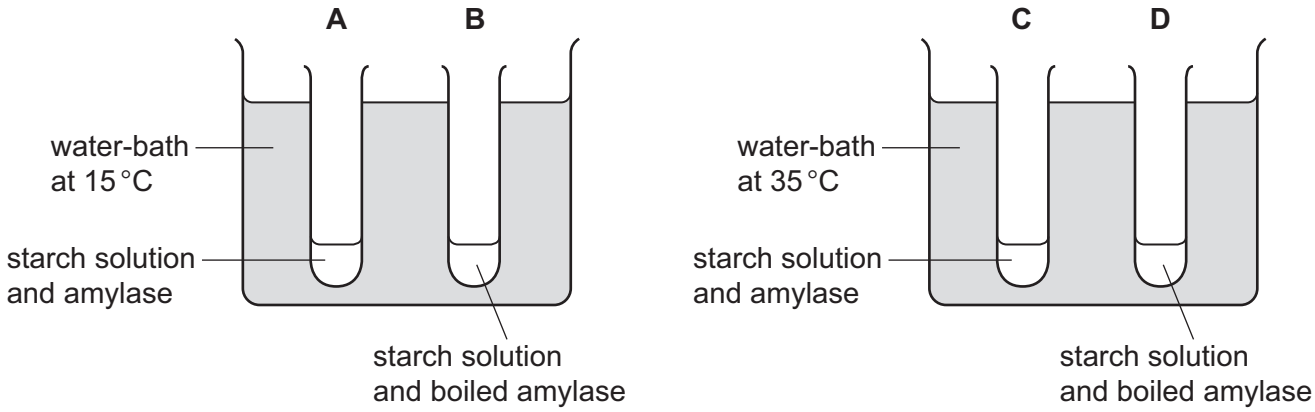


What are the labels for the *x*-axis and the *y*-axis?

	x-axis	*y*-axis
A	pH	rate of reaction
B	pH	time
C	rate of reaction	pH
D	time	pH

11 Four test-tubes were set up as shown in the diagram.

In which test-tube is the starch digested most quickly?



12 Which row shows the raw materials needed for photosynthesis and the products of photosynthesis?

	raw materials	products
A	water + chlorophyll	carbon dioxide + glucose
B	carbon dioxide + water	chlorophyll + oxygen
C	oxygen + carbon dioxide	water + glucose
D	water + carbon dioxide	glucose + oxygen

13 Which food is the best source of vitamin C?

A bread

B meat

C milk

D oranges

14 Which reagent is used to test for the presence of vitamin C?

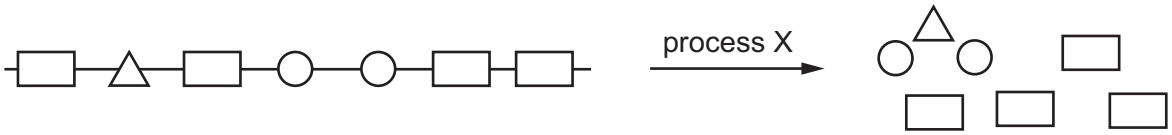
A Benedict's

B biuret

C DCPIP

D ethanol

15 The diagram shows a large food molecule changing into smaller molecules.



What is process X?

A absorption

B chewing

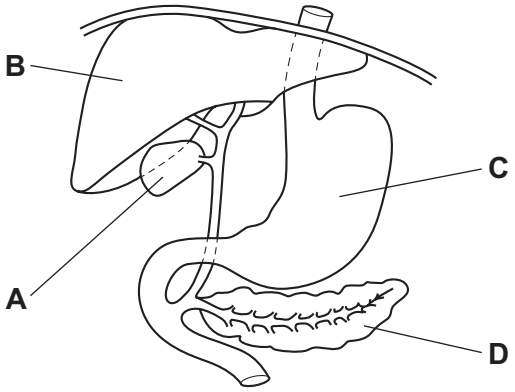
C digestion

D secretion

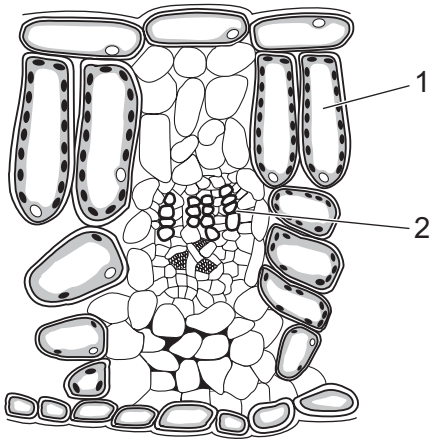
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16 The diagram shows part of the human alimentary canal and associated organs.

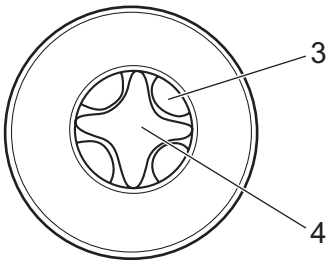
Which structure produces hydrochloric acid?



17 The diagrams show sections of a leaf and a root.



section of a leaf



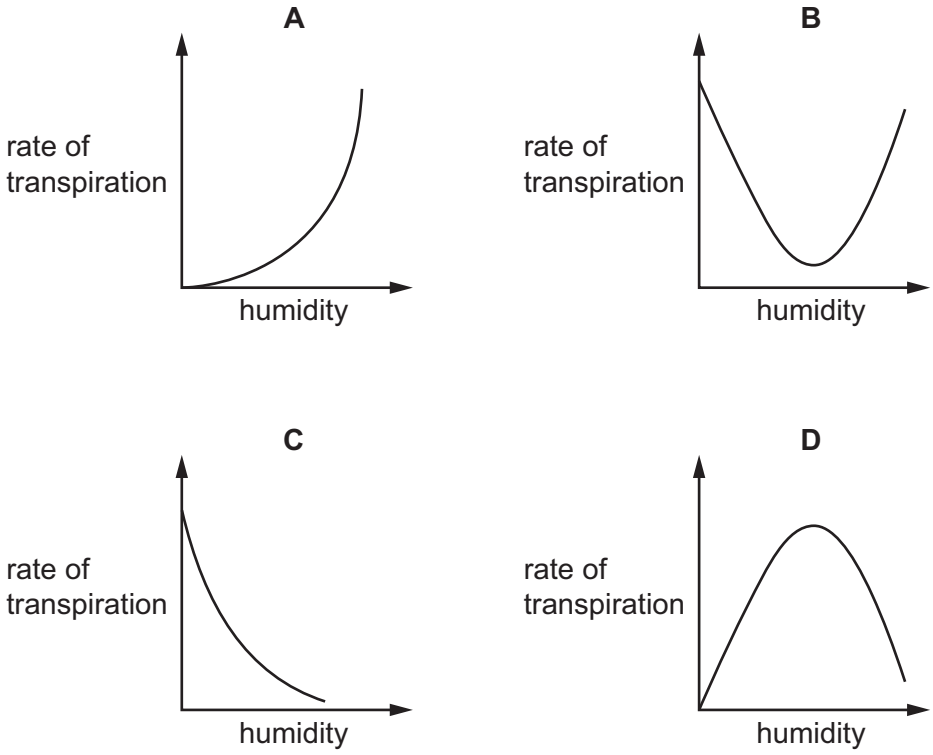
section through a root

not to scale

Which two labelled structures identify xylem?

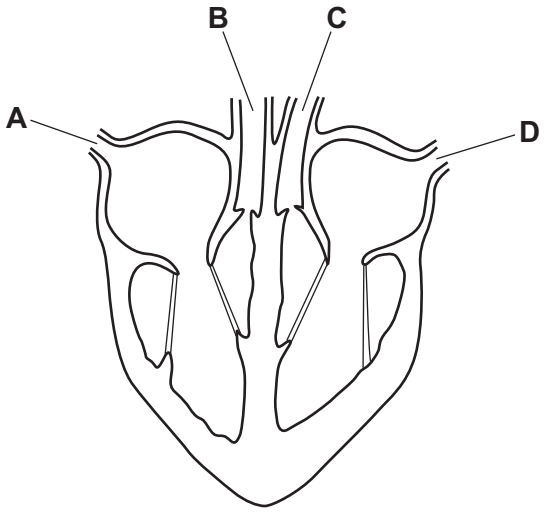
A 1 and 4 **B** 2 and 3 **C** 1 and 3 **D** 2 and 4

18 Which graph shows the effect of increasing humidity on the rate of transpiration?



19 The diagram shows a section through a mammalian heart.

Which part carries blood directly from the lungs?



20 Which component of blood produces antibodies?

A red blood cells

B white blood cells

C platelets

D plasma

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21 Some features that help to defend the body against pathogens are listed.

1 mucus

2 skin

3 stomach acid

4 phagocytosis

Which features can prevent pathogens entering body tissues?

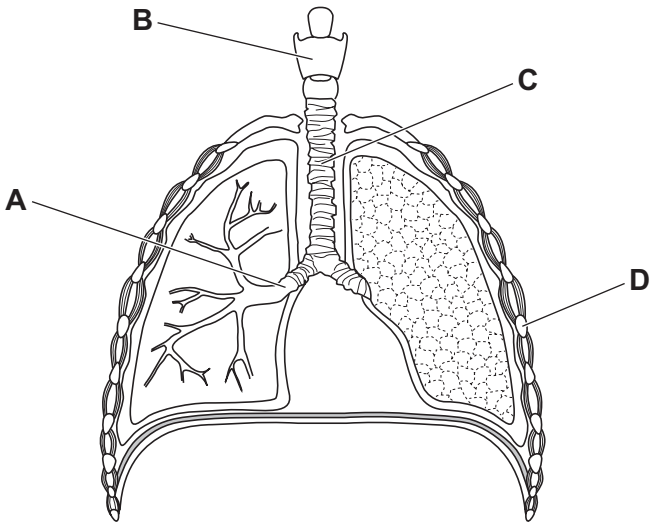
A 1, 2, 3 and 4

B 1, 2 and 3 only

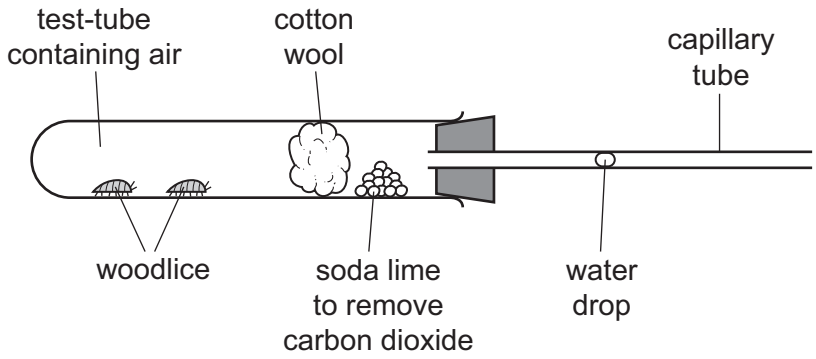
C 2 and 3 only

D 4 only

22 Which structure is a bronchus?



23 The diagram shows the apparatus used by a student to investigate respiration in woodlice (small arthropods).



Which explanation about the direction that the water drop will move is correct?

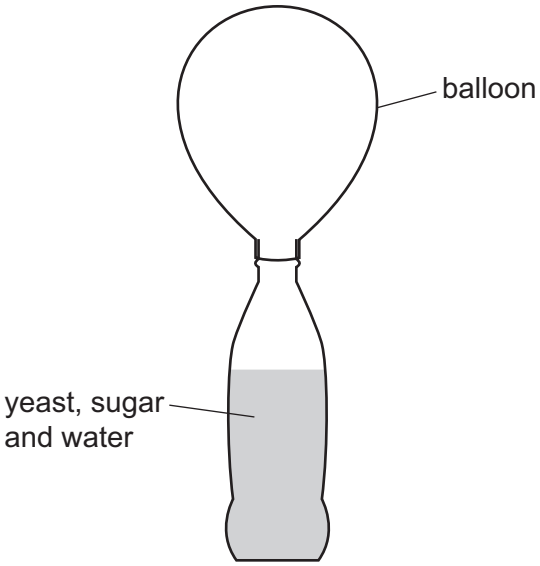
A The water drop will move away from the woodlice because respiration uses carbon dioxide.

B The water drop will move away from the woodlice because respiration uses oxygen.

C The water drop will move towards the woodlice because respiration uses carbon dioxide.

D The water drop will move towards the woodlice because respiration uses oxygen.

24 Some students placed yeast, sugar and water into a bottle. They then placed an empty balloon over the opening of the bottle. The bottle was left in a warm place for one hour. During this time the balloon increased in size.



Why does the balloon increase in size?

A The yeast makes alcohol.

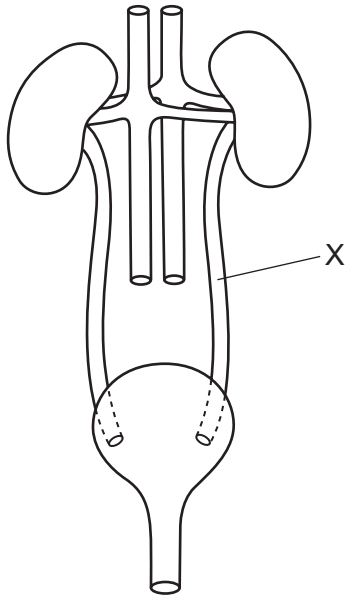
B The yeast makes carbon dioxide.

C The yeast makes oxygen.

D The yeast makes lactic acid.

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25 The diagram shows part of the excretory system of a female mammal.



What is tube X?

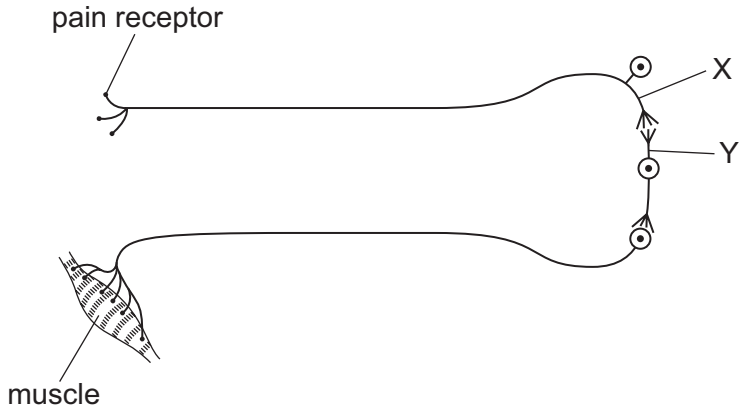
A ureter

B urethra

C uterus

D vein

26 The diagram shows a reflex arc that passes through the spinal cord.

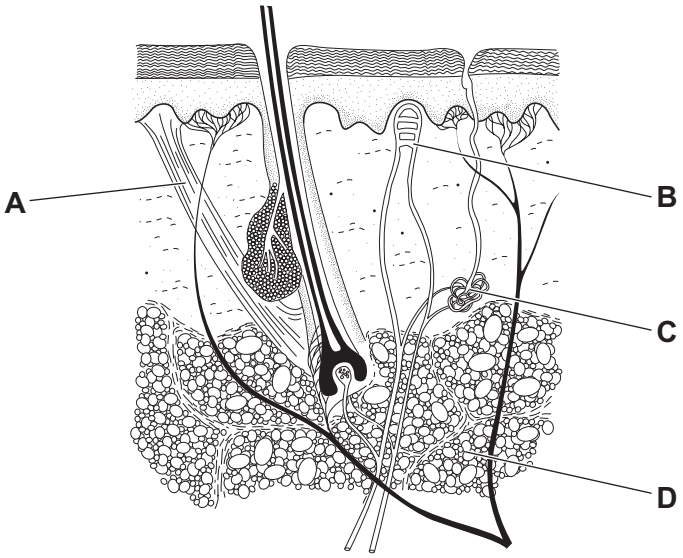


Which type of neurones are X and Y?

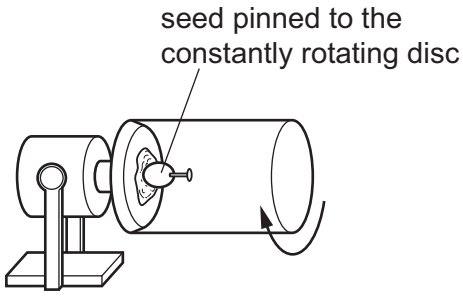
	X	Y
A	motor neurone	relay neurone
B	relay neurone	sensory neurone
C	sensory neurone	motor neurone
D	sensory neurone	relay neurone

27 The diagram shows a section through the skin.

Which labelled part is a hair erector muscle?



28 A seed is placed and grown on a rotating disc, as shown.



Which diagram shows the appearance of the seedling shoot after seven days?



29 Which definition of a drug is correct?

A a substance that increases the rate of a chemical reaction and is not changed by the reaction

B a protein that functions as a biological catalyst

C a substance taken into the body that modifies or affects chemical reactions in the body

D a chemical substance, produced by a gland and carried by the blood, which alters the activity of one or more specific target organs

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30 Which is an example of sexual reproduction?

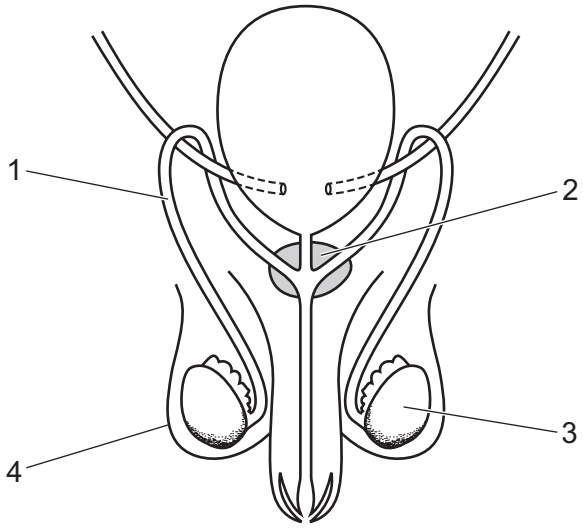
A a female insect laying unfertilised eggs that develop into new insects

B division of a single-celled bacterium to produce two new bacteria

C fusion of a pollen grain nucleus with an ovule nucleus to produce a seed

D growing cuttings taken from one plant to produce new, genetically identical plants

31 The diagram shows part of the male reproductive system.



Which structures manufacture sperm and the fluid the sperm are transported in?

A 1 and 2 **B** 1 and 4 **C** 2 and 3 **D** 3 and 4

32 Which type of birth control prevents sperm from entering the vagina?

A contraceptive pill

B diaphragm

C IUD

D vasectomy

33 An allele is a version of which structure?

A amino acid

B chromosome

C gene

D protein

34 Which are functions of mitosis?

1 growth

2 production of gametes

3 repair of damaged tissue

4 replacement of cells

5 asexual reproduction

A 1, 3, 4 and 5

B 1 and 3 only

C 2, 3 and 4

D 2 only

35 A species of insect usually has pale-coloured wings. This helps to camouflage them on pale-coloured tree trunks. A few of the insects in this species have darker coloured wings.

After a number of years the tree trunks become darker in colour due to environmental changes. The insects with dark-coloured wings become more common than insects with pale-coloured wings in this species.

Which process causes this change in the proportion of insects with dark-coloured wings?

A biotechnology

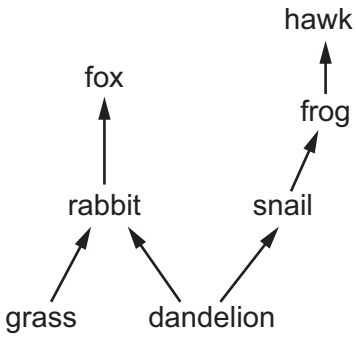
B conservation

C natural selection

D selective breeding

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36 The diagram shows a woodland food web.



Which statement is **not** correct?

A Dandelions and grass are both producers.

B The fox and the hawk are both tertiary consumers.

C The frog is a secondary consumer.

D The rabbit and the snail are both primary consumers.

37 Which organism makes its own organic nutrients using light energy?

A producer

B consumer

C herbivore

D carnivore

38 Which process releases carbon dioxide into the atmosphere?

A decomposition

B fossilisation

C photosynthesis

D transpiration

39 Which row shows what is used to make biofuel, bread and fruit juice?

	biofuel	bread	fruit juice
A	pectinase	pectinase	yeast
B	pectinase	yeast	pectinase
C	yeast	pectinase	yeast
D	yeast	yeast	pectinase

40 What is an effect of an increase in the use of insecticides?

A decreased competition between crop plants and weeds

B decreased numbers of extinctions

C decreased numbers of pollinators

D decreased use of fertilisers

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